

WHAT I CLAIM AS MY INVENTION IS:

1. A light engine for a scrolling color projection system comprising:
  - a light source for providing an output beam;
  - first and second splitting filters having filter edges for splitting the output beam into red, green and blue components having upper and lower wavelength edges;
  - field lenses to form the red, green and blue components into red, green and blue beams;
  - first, second and third rotatable prisms for scrolling the red, green and blue beams;
  - first and second recombining filters having filter edges for recombining the red, green and blue beams; and
  - at least one source filter having at least one filter edge for eliminating undesired components from the output beam prior to scrolling;
  - the filter edges of the splitting filters chosen to mask beamsteering effects on the recombining filters.
2. The light engine of claim 1 in which:
  - the filter edges of the first and second splitting filters are chosen to cut off the lower wavelength edge of the red component and the upper wavelength edge of the blue component are beyond the corresponding filter edges of the first and second recombining filters, so that the transmitted red and blue components are relatively unaffected by the filter edges of the recombining filters, and the filter edge of the source filter is chosen to eliminate components from the output beam in the wavelength region between the lower wavelength edge of the red component and the upper wavelength region of the blue component.
3. The light engine of claim 1 in which:

the first splitting filter reflects red light and transmits green and blue light from the source;

the second splitting filter reflects green light and transmits blue light;

the first recombining filter reflects green light and transmits red light;

the second recombining filter reflects red and green light and transmits blue light.

4. The light engine of claim 3 in which the source filter is located between the first splitting filter and second splitting filter.

5. The light engine of claim 4 in which the source filter is a low pass filter.

6. The light engine of claim 5 in which:

the light source is a UHP lamp;

the source filter has a cut-off of about 568 nm;

the first splitting filter has a cut-off of from about 593 to 604 nm; and

the second splitting filter has a cut-off of about 501 nm;

the first recombining filter has a cut-on of from about 574 to 579 nm; and

the second recombining filter has a cut-off of about 518 nm.

7. The light engine of claim 4 in which the first splitting filter reflects both red and orange light, and the source filter is positioned between the first splitting filter and the first recombining filter.

8. The light engine of claim 1 in which the source filter is a notch filter.

9. The light engine of claim 1 in which the source is a xenon lamp.

10. A scrolling color projection system comprising;

a light modulator panel;

a light engine as provided in claim 1 for illuminating the panel;

drive means for driving the light modulator panel in accordance with a display signal; and  
a projection lens for projecting the modulated illumination onto a display surface.